

REMARKS

The Amendments

Claim 3 is amended to address the 35 U.S.C. § 112 rejection and fix a typographical error. Claim 10 is amended to correct a typographical error; i.e., the value for birefringence should be less than or equal to 0.16; see, e.g., page 7, line 18, of the disclosure. Support for the new dependent claims is found in the specification at page 21, lines 6-8 and 27-31; page 22, lines 11-13; page 22, line 17; page 23, line 16, to page 28, line 4; page 37, line 16, to page 39, line 1; page 44, line 15, to page 45, line 12; page 49, line 4, to page 50, line 13; and page 56, line 36, to page 58, line 4; for example.

The amendments do not narrow the scope of the claims. The amendments should not be interpreted as an acquiescence to any objection or rejection made in this application.

To the extent that the amendments avoid the prior art or for other reasons related to patentability, competitors are warned that the amendments are not intended to and do not limit the scope of equivalents which may be asserted on subject matter outside the literal scope of any patented claims but not anticipated or rendered obvious by the prior art or otherwise unpatentable to applicants. Applicants reserve the right to file one or more continuing and/or divisional applications directed to any subject matter disclosed in the application which has been canceled by any of the above amendments.

The Rejection under 35 U.S.C. §112, second paragraph

The rejection of claims 3 and 5 under 35 U.S.C. §112, second paragraph, is believed

to be rendered moot by the above amendment to claim 3.

The Rejection under 35 U.S.C. §102

The rejection of claims 1-14 under 35 U.S.C. §102(a), as being anticipated by DE 10221751 is respectfully traversed.

The DE '751 reference was published on December 19, 2002. A search of the EPO database reveals no earlier publication for any corresponding application. Applicants have claimed priority to DE 10235558.4, filed August 3, 2002. Receipt of the certified priority document is acknowledged in the Office Action. Applicants will submit a Supplemental Reply shortly providing a verified English-language translation of the priority document. This will support the instant claims and thus perfect applicants' claim to priority. Thus, DE '751 will not be prior art and the rejection will be overcome.

The Rejection under 35 U.S.C. §103

The rejection of claims 1-12 under 35 U.S.C. §103, as being obvious over DE '10058474 is respectfully traversed.

DE '474 discloses twisted nematic (TN) and supertwisted nematic (STN) liquid crystal displays. The displays contain a liquid crystal mixture having cyano-terminated compounds (I) and alkenyl-terminated compounds (II). The mixtures may optionally contain an optically active component of a nature and amount to give a ratio, d/p , between the liquid crystal mixture layer thickness in the display, d , and the helix pitch of the mixture, p , of 0.2 to 1.3.

DE '474 fails to disclose or suggest compositions having a helix pitch of $\leq 1 \mu\text{m}$. DE '474 also fails to disclose or suggest compositions having a birefringence, Δn , of ≤ 0.16 .

The disclosure of a d/p ratio of 0.2 to 1.3 for TN or STN displays is contrary to suggesting that the helix pitch, p, is ≤ 1 . Typically, TN or STN displays have a layer thickness, d, of 2-10 μm . See, e.g., Examples 2 and 4 of the Tomi (U.S. Patent No. 5,776,366) reference of record showing STN cells with a layer thickness of about 6 μm . Thus, to attain the d/p ratio of 0.2 to 1.3, the helix pitch, p, would have to be at least about 1.5 μm (e.g., 2 μm /1.5 μm = 1.3). This would be the minimum value of p to attain d/p = 0.2 - 1.3 for d = 2 - 10. Accordingly, it is urged that DE '474 fails to disclose or suggest compositions provided with an optically active component of a nature and in an amount such that the mixture would exhibit a helix pitch of ≤ 1 .

The distinction of the claimed mixtures is further evident from their different utility. The claimed mixtures are used for chiral nematic or cholesteric displays wherein the mixtures must exhibit a significantly higher twist (and, thus, lower helix pitch) compared with media for TN and STN cells. Thus, the optically active component will be of such strength and amount that the mixtures would be significantly different than those for TN or STN applications. See, e.g., pages 1 and 2 of the instant specification, particularly page 1, lines 17-19.

The Office Action states that the compositions of the reference generically include the same types of compositions as the instant claims and would thus (apparently inherently) meet the helix pitch and birefringence properties of the claimed mixtures. But even if they contained the exact same compounds, the amounts of those compounds is also a significant factor in the resulting properties. Given the d/p ratio recited by DE '474, it would be apparent to one of ordinary skill in the art that the reference does not suggest compositions having the nature and amount of high twist compounds to provide a low helix pitch as in the instant claims. To the contrary, the d/p ratio recited in the reference suggests a much higher helix

pitch. The reference certainly does not inherently result in such a helix pitch since, as demonstrated above, the pitch could be well outside this range depending on the layer thickness.

DE '474 discloses nothing regarding the birefringence of its compositions and, for reasons analogous to those above, fails to suggest or inherently meet the recitation of the instant claims.

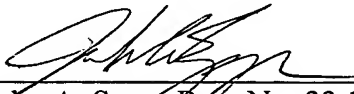
Regarding new claims 15 and 16, DE '474 clearly does not disclose or suggest LC displays having a d/p ratio of 2 - 20 since the reference expressly recites a lower range of 0.2 - 1.3 for such ratio. These claims are further distinguished for this additional reason.

For all of the above reasons, it is urged that DE '474 fails to render the claimed invention obvious to one of ordinary skill in the art. Thus, the rejection under 35 U.S.C. §103 should be withdrawn.

It is submitted that the claims are in condition for allowance. However, the Examiner is kindly invited to contact the undersigned to discuss any unresolved matters.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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